## Abstract

A method, apparatus and article of manufacture to aid in the characterization of a device establishes a device S-parameter matrix  $(S_D)$  to represent electrical behavior of the device, an adapter T-parameter matrix  $(T_a)$ to represent all possible electrical paths through circuits to all device ports of the device, and a cascaded S-parameter matrix  $(S_c)$  to represent the circuits 10 cascaded with the device. Values for the adapter Tparameter matrix are obtained either through measurement or modeling. The device cascaded with the circuits is measured to obtain values for the cascaded S-parameter matrix, permitting use of a general solution for the 15 device S-parameter matrix as a function of the adapter Tparameter matrix and the cascaded S-parameter matrix.